IN THE CLAIMS:

1. *(currently amended)* A light coupling assembly, comprising:

a device portion including a plurality of optical devices arranged in a first fixed pattern within at least a portion of a silicon surface layer of a silicon-on-insulator (SOI) structure, said optical devices spaced a prescribed distance apart; and

a silicon-based, passive light coupling portion including a plurality of anisotropically etched coupling elements, said coupling elements arranged in a second, fixed pattern so as to correspond with a respective one of the plurality of optical devices, wherein the light coupling portion is disposed in an aligned arrangement with the device portion so as to couple light into each optical device.

2. *(previously presented)* The light coupling assembly of claim 1, further comprising a securing portion wherein each one of said plurality of anisotropically etched coupling elements is secured relative to a respective one of said plurality of optical devices as aligned.

3. *(previously presented)* The light coupling assembly of claim 2, wherein the securing portion includes material selected from the group consisting of an adhesive material and a bonding material.

4. *(previously presented)* The light coupling assembly of claim 1, wherein each one of the plurality of anisotropically etched coupling elements and the respective one of the plurality of optical devices combine to form a hybrid active electronic and optical circuit including an active electronic device and at least one optical device.

5. *(currently amended)* The light coupling assembly of claim 4, wherein the hybrid active electronic and optical circuit comprises an input/output light coupler and an evanescent coupling region, wherein the input/output light coupler is formed within the silicon-based, passive light coupling portion and is associated with the at least one optical device, and wherein the evanescent coupling region is at least partially formed from a gap

portion that couples the passive light coupling portion to the device portion ~~input/output light coupler to the at least one optical device using evanescent coupling~~.

6. *(previously presented)* The light coupling assembly of claim 5, wherein the evanescent coupling region includes a tapered gap portion.

7. *(previously presented)* The light coupling assembly of claim 6, wherein the tapered gap portion enhances coupling efficiency.

8. ***cancelled***

9. *(previously presented)* The light coupling assembly of claim 5, wherein the evanescent coupling region is at least partially formed using an optically clear adhesive.

10. *(previously presented)* The light coupling assembly of claim 9, wherein the optically clear adhesive secures the input/output light coupler to the evanescent coupling region.

11. *(previously presented)* The light coupling assembly of claim 5, wherein the evanescent coupling region is at least partially formed from air.

12. *(previously presented)* The light coupling assembly of claim 5, wherein the at least one optical device includes an optical waveguide having an upper cladding, and the evanescent coupling region and the upper cladding are formed at least partially of the same material.

13. *(previously presented)* The light coupling assembly of claim 12, wherein the evanescent coupling region and the upper cladding are at least partially formed of glass.

14. *(previously presented)* The light coupling assembly of claim 12, wherein the evanescent coupling region and the upper cladding are at least partially formed of a polyamide.

15. *(previously presented)* The light coupling assembly of claim 12, wherein the evanescent coupling region and the upper cladding are at least partially formed of an electric insulator.

16. *(previously presented)* The light coupling assembly of claim 15, wherein the electric insulator is also used to partially define active electronics in the hybrid active electronic and optical circuit.

17. *(currently amended)* The light coupling assembly of claim ~~5~~ 4, wherein altering an electric voltage applied to the active electronic device affects a free carrier distribution in a region of the at least one optical device, and thereby changes the effective mode index of the at least one optical device.

18. *(previously presented)* The light coupling assembly of claim 17, wherein the at least one optical device includes a waveguide.

19. *(previously presented)* The light coupling assembly of claim 5, wherein the evanescent coupling region is at least partially formed from an optically clear polymer.

20. *(previously presented)* The light coupling assembly of claim 5, wherein the evanescent coupling region has a thickness of less than 0.5μm.

21. *(previously presented)* The light coupling assembly of claim 6, wherein the tapered gap portion supports a first edge of the input/output light coupler at a height that is less than 100 microns above a second edge of the input/output coupler.

22. *(previously presented)* The light coupling assembly of claim 21, wherein the second edge is in contact with a waveguide proximate the input/output coupler.

23. *(previously presented)* The light coupling assembly of claim 21, wherein the second is out of contact with a waveguide proximate the input/output coupler.

24. *(previously presented)* The light coupling assembly of claim 6, further comprising a ledge that supports the input/output light coupler above the tapered gap portion.

25. *(previously presented)* The light coupling assembly of claim 24, wherein the ledge has a height that is less than 50 microns.

26. *(previously presented)* The light coupling assembly of claim 25, wherein the ledge has a height of less than 3 microns.

27. *(previously presented)* The light coupling assembly of claim 5, wherein the input/output light coupler includes a waveguide prism.

28. *(previously presented)* The light coupling assembly of claim 6, wherein the input/output light coupler includes a waveguide prism.

29. – 31. ***cancelled***

32. *(previously presented)* The light coupling assembly of claim 5, wherein the input/output light coupler includes a waveguide grating.

33. *(previously presented)* The light coupling assembly of claim 6, wherein the input/output light coupler includes a waveguide grating.

34. – 36. ***cancelled***

37. *(previously presented)* The light coupling assembly of claim 5, wherein the input/output light coupler is at least partially formed from a wafer disposed above the active electronic device and the at least one optical device.

38. *(previously presented)* The light coupling assembly of claim 5, wherein the hybrid active electronic and optical circuit includes a focusing mirror.

39. *(previously presented)* The light coupling assembly of claim 5, wherein the input/output coupler couples light into or out of a waveguide.

40. *(currently amended)* The light coupling assembly of claim ~~5~~ 4, wherein the hybrid active electronic and optical circuit includes a Fabry-Perot cavity.

41. *(currently amended)* The light coupling assembly of claim ~~5~~ 4, wherein the hybrid active electronic and optical circuit includes a wavelength division multiplexer modulator.

42. *(currently amended)* The light coupling assembly of claim ~~5~~ 4, wherein the hybrid active electronic and optical circuit includes an evanescent coupler.

43. *(currently amended)* The light coupling assembly of claim ~~5~~ 4, wherein the hybrid active electronic and optical circuit includes a diode.

44. *(currently amended)* The light coupling assembly of claim ~~5~~ 4, wherein the hybrid active electronic and optical circuit includes a transistor.

45. *(previously presented)* The light coupling assembly of claim 1, wherein each anisotropically etched coupling element is a KOH etched waveguide prism.

46. – 47. *cancelled*

48. *(previously presented)* The light coupling assembly of claim 1, further comprising an AWG.

49. *(previously presented)* The light coupling assembly of claim 1, further comprising at least one evanescent coupling region associated with each of the plurality of anisotropically etched coupling elements, one of the at least one evanescent coupling regions extending under at least one of said plurality of anisotropically etched coupling elements and attached to at least one of the plurality of optical devices.

50. *(previously presented)* The light coupling assembly of claim 49, wherein at least one evanescent coupling region is at least partially configured as a gap portion.

51. *(previously presented)* The light coupling assembly of claim 50, wherein the at least one evanescent coupling region includes a tapered gap portion.

52. *(previously presented)* The light coupling assembly of claim 1, wherein the light coupling assembly includes one from the group of a p-n device, a field plated device, a Schottky device, a MOSCAP, and a MOSFET.

53. *(currently amended)* A light coupling assembly, comprising:

a device portion including a plurality of optical devices arranged in a first fixed pattern within at least a portion of a silicon surface layer of a silicon-on-insulator (SOI) structure, each of said plurality of optical devices spaced by a prescribed spacing; and

a silicon-based, passive light coupling portion wafer including a plurality of etched light coupling elements, each one of the plurality of etched light coupling elements arranged in a second, fixed pattern such that the etched light coupling elements are disposed in an aligned arrangement with respective ones of the optical devices so as to couple light into the optical devices.

54. *(previously presented)* The light coupling assembly of claim 53, further comprising a securing portion wherein each of said plurality of etched light coupling elements are secured relative to a respective one of said plurality of optical devices as aligned.

55. *(previously presented)* The light coupling assembly of claim 54, wherein the securing portion includes one from the group of an adhesive or a bond.

56. *(currently amended)* A method of etching a light coupling assembly, comprising:

etching a device portion include a plurality of optical devices arranged in a first fixed pattern within a silicon surface layer of a silicon-on-insulator (SOI) structure, wherein each of said plurality of optical devices is spaced by a first prescribed spacing;

etching a silicon-based, passive light coupling portion wafer including a plurality of etched light coupling elements, wherein each one of the plurality of etched light coupling elements is arranged in a second, fixed pattern so as to correspond with a respective one of the plurality of optical devices, and wherein each one of said plurality of etched light coupling elements is spaced by a second prescribed spacing, the second prescribed spacing equaling the first prescribed spacing; and

aligning the light coupling portion wafer and the device portion, wherein each one of said plurality of etched light coupling elements is aligned with a respective one of said plurality of optical devices.

57. *(previously presented)* The light coupling assembly as defined in claim 2 wherein the securing portion includes an atomic bonding of the device portion to the light coupling portion.

58. *(previously presented)* The light coupling portion assembly as defined in claim 53 wherein the light coupling portion wafer includes an evanescent coupling region.